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(51) International Patent Classification ⁶ : C12N 15/13, A61K 39/395, 47/48, 51/10, C07K 16/30, C12N 15/86, 5/10, A61K 39/00	A3	(11) International Publication Number: WO 97/44461 (43) International Publication Date: 27 November 1997 (27.11.97)
(21) International Application Number: PCT/US97/08962 (22) International Filing Date: 22 May 1997 (22.05.97) (30) Priority Data: 08/657,449 22 May 1996 (22.05.96) US (60) Parent Application or Grant (63) Related by Continuation US 08/657,449 (CIP) Filed on 22 May 1997 (22.05.97) (71) Applicant (for all designated States except US): NOVOPHARM BIOTECH, INC. [US/US]; Suite 106, 6190 Cornerstone Court E., San Diego, CA 92121 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): DAN, Michael, D. [-/CA]; 30 Nably Court, Scarborough, Ontario M1B 2K9 (CA). MAITI, Pradip, K. [CA/CA]; 38 Swan Lake, Winnipeg, Manitoba R3T 4W1 (CA). KAPLAN, Howard, A. [CA/CA]; 18 Hillhouse Road, Winnipeg, Manitoba R2V 2V9 (CA).		(74) Agents: LEHNHARDT, Susan, K. et al.; Morrison & Foerster LLP, 755 Page Mill Road, Palo Alto, CA 94304-1018 (US). (81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the</i> <i>claims and to be republished in the event of the receipt of</i> <i>amendments.</i> (88) Date of publication of the international search report: 7 May 1998 (07.05.98)
(54) Title: ANTIGEN BINDING FRAGMENTS THAT SPECIFICALLY DETECT CANCER CELLS, NUCLEOTIDES ENCODING THE FRAGMENTS, AND USE THEREOF FOR THE PROPHYLAXIS AND DETECTION OF CANCERS		
(57) Abstract <p>The present invention relates to monoclonal antibody H11 and antigen binding fragments that specifically bind to the antigen recognized by H11, the C-antigen. The C-antigen is found specifically on neoplastic cells and not on normal cells. Also disclosed are polynucleotide and polypeptide derivatives based on H11, including single chain V region molecules and fusion proteins, and various pharmaceutical compositions. When administered to an individual, the H11 antibody is effective in diagnosing, localizing, and/or treating neoplasias. The invention further provides methods for treating a neoplastic disease, particularly melanoma, neuroblastoma, glioma, soft tissue sarcoma, and small cell lung carcinoma. Patients who are in remission as a result of traditional modes of cancer therapy may be treated with a composition of this invention in hopes of reducing the risk of recurrence. Patients may also be treated concurrently with the antibodies and traditional anti-neoplastic agents.</p>		

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 97/08962

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 C12N15/13 A61K39/395 A61K47/48 A61K51/10 C07K16/30
C12N15/86 C12N5/10 A61K39/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 92 20799 A (Y. HAGIWARA) 26 November 1992 see the whole document ---	1-50
A	WO 95 35374 A (M. DAN) 28 December 1995 see the whole document ---	1-50
A	M. MCKNIGHT ET AL.: "Monopharm-C, a human anticancer MAb: generation, production and immunological properties." PROCEEDINGS OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH, vol. 34, March 1993, USA, page A1223 XP002057461 see abstract 1330 -----	1-50

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

3 March 1998

Date of mailing of the international search report

17.03.98

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INTERNATIONAL SEARCH REPORT

Int. l. application No.
PCT/US 97/08962

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
see FURTHER INFORMATION sheet PCT/ISA/210
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/US 97/08962

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Remark : Although claims 39-47 are directed to a method of treatment of the human/animal body , the search has been carried out and based on the alleged effects of the compound/composition.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 97/08962

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9220799 A	26-11-92	JP 4346792 A	02-12-92
		AU 1875592 A	30-12-92

WO 9535374 A	28-12-95	US 5639863 A	17-06-97
		AU 2709295 A	15-01-96
		CA 2192079 A	28-12-95
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		NO 965395 A	17-12-96
